What Is Claimed Is:

1. A structured document processing system for processing a structured document that is structurally represented and contains one or more document parts, the structured document processing system comprising:

instruction providing means for providing an extraction instruction to extract a document part, a repetitive duplication instruction to duplicate a document part by a given number of times, or an insertion/substitution instruction to insert or substitute a document part to a corresponding document part by embedding the instruction in a structured document containing the document part;

analyzing means for analyzing the structure of the structured document to generate a parse tree;

instruction separating means for separating the instruction embedded in the structured document and the document part to retrieve the instruction, based on the parse tree generated by the analyzing means;

document processing description generating means for merging and sorting the extraction instruction retrieved by the instruction separating means from a first structured document in which the extraction instruction is embedded, and the repetitive duplication instruction and/or insertion/substitution instruction retrieved by the instruction separating means from a second structured document in which the repetitive duplication instruction and/or insertion/substitution instruction is embedded to generate a document processing description having an instruction string for processing the first and second structured documents;

extracting means for retrieving a first document part subject to the extraction instruction from the first structured document;

repetitive duplication means for repeatedly duplicating a document part subject to the repetitive duplication instruction and an instruction provided to the

document part by a given number of times;

inserting/substituting means for inserting the first document part before or after a second document part subject to the insertion/substitution instruction or substituting the first document part for the second document part; and

an interpreter for sequentially interpreting the document processing description and synthesizing document parts by using the extracting means, the repetitive duplication means, and/or the inserting/substituting means.

2. The structured document processing system according to claim 1, wherein:

the extraction instruction is an attribute extraction instruction that specifies retrieval of an attribute of a document part;

the insertion/substitution instruction is an attribute substitution instruction that specifies substitution of an attribute of a document part;

the instruction separating means retrieves the attribute extraction instruction and attribute insertion/substitution instruction from a structured document;

the inserting/substituting means is attribute substituting means for substituting an attribute of the first document part for an attributes of the second document part subject to the attribute substitution instruction; and

the interpreter interprets the document processing description synthesized by the document processing description synthesizing means, extracts the attribute of a given node of the document part specified in the attribute extraction instructions, and sets the extracted attribute in the given node of the document part specified in the attribute substitution instruction.

3. The structured document processing system according to claim 2, wherein the attribute substituting means makes, in accordance with the attribute substitution instruction, substitution of a string synthesized by combining an attribute value string set in advance in the document part and a string obtained from a state of

90

the system.

4. The structured document processing system according to claim 1, wherein:

the extraction instruction includes a path name;

each of the repetitive duplication instruction and insertion/substitution instruction includes a pattern expression;

the instruction separating means retrieves, from the structured document, the extraction instruction and the path name, or the repetitive duplication instruction, the insertion/substitution instruction, and the pattern expressions;

the repetitive duplication means performs pattern matching between the path name provided to the extracted document part and the pattern expression, and performs repetitive duplication by the number of document parts having a matching path name; and

the inserting/substituting means performs pattern matching between the path name provided to the extracted document part and the pattern expression, and inserts or substitutes a document part having a matching path name.

5. The structured document processing system according to claim 1, wherein the inserting/substituting means inserts or substitutes the extraction instruction provided to the document part retrieved by the extracting means.

6. The structured document processing system according to claim 5, wherein the inserting/substituting means, when inserting or substituting the extraction instruction provided to the document part retrieved by the extracting means, changes the path name included in the extraction instruction and then inserts or substitutes the extraction instruction.

7. A structured document processing system for processing a structured document containing one or more document parts and structurally represented, the processing being implemented by cooperative processing through computer

communications on a distributed network system constituted of two or more networked computers, the structured document processing system comprising at least:

a file server that stores a structured document as a file of a predetermined format, and in response to the receipt of a file name, sends a corresponding file via the network; and

a structured document processing server that performs document processing for the file,

wherein the structured document processing server comprises:

input means for inputting and analyzing a processing invocation description containing the file name of a first structured document in which an extraction instruction specifying extraction of a document part is embedded and the file name of a second structured document in which a repetitive duplication instruction or insertion/substitution instruction is embedded, sending the file name contained in the processing invocation description to the file server via the network, and inputting a file corresponding to the file name from the file server via the network;

document processing means for analyzing the first structured document and the second structured document to generate a parse tree, scanning the parse tree and separating the document part and the instruction to retrieve the instruction, merging and sorting the instructions to generate a document processing description containing an instruction string for processing the structured documents, and interpreting the document processing description to synthesize a structured document; and

output means for outputting the synthesized structured document or the document part obtained by the document processing means as a file of a given format via the network.

8. The structured document processing system according to claim 7, wherein:

the processing invocation description may define a distributed file name on

the network in a format in which the server name of the structured document

processing server is contained;

at least first and second structured document processing servers to process

the structured document exist on the network;

in a first processing invocation description inputted to the first structured

document processing server, file names of a first original document and/or first

template subject to document processing are described in a format of a second

processing invocation description containing the server name of the second structured

document processing server; and

the first structured document processing server, in response to the input of

the first processing invocation description, extracts the second processing invocation

description described as the file names of the first original document and/or first

template, sends it to the second structured document processing server via the network,

receives a file containing a structured document or a document part outputted by the

second structured document processing server invoking the second processing

invocation description, via the network, and uses it as the first original document

and/or first template.

9.   The structured document processing system according to claim 8,
wherein:

the second structured document processing server to input the second

processing invocation description is configured on the same computer system as that of

the first structured document processing server and does not require communications

with the first structured document processing server via the network; and

the first structured document processing server has switching means for

inputting, in place of the file containing a structured document or document parts, the

structured document or document part, which is the product of processing by the

second structured document processing server, as a parse tree.

10. The structured document processing system according to claim 7, further comprising:

holding means for holding a parse tree of an original document or template inputted from the file server in association with a file name or a processing invocation description; and

input means for inputting, instead of a structured document file corresponding to the file name from the file server, a corresponding parse tree from the holding means.

11. The structured document processing system according to claim 2, wherein:

the structured document processing system inputs a processing invocation description containing a file name of the first structured document in which the extraction instruction specifying the extraction of a document part is embedded, and a file name of the second structured document in which the repetitive duplication instruction or attribute substitution instruction is embedded; and

the attribute substituting means sets a string obtained by replacing part of the processing invocation description by an attribute string set in advance in the document part, as the attribute string of the document part.

12. A structured document processing system for processing a structured document that is structurally represented and contains one or more document parts, the system comprising:

analyzing means for analyzing a structure of the structured document to generate a parse tree;

instruction separating means for separating, based on the parse tree generated by the analyzing means, an instruction embedded in the structured document from a document part to which the instruction is provided, retrieving the instruction, and outputting error information upon detection of a syntax error of the instruction;

9 4

error notice document synthesizing means for inputting the error information to synthesize a document for error notice;

processing invocation description synthesizing means for merging and sorting instructions retrieved from the structured document to generate a document processing description containing an instruction string for processing the structured document, and generating information about access to the error notice document;

processing invocation description analyzing means for interpreting a processing invocation description and retrieving the error notice document; and

holding means for holding the error notice document.

13.   A structured document processing method for processing a structured document that is structurally represented and contains one or more document parts, the method comprising the steps of:

analyzing the structured document in which an instruction is embedded to generate a parse tree;

scanning the parse tree and separating the instruction from a document part, to which the instruction is provided, to retrieve the instruction;

merging and sorting the instructions retrieved from the structured document to generate a document processing description containing an instruction string for processing the structured document; and

interpreting the document processing description to synthesize a structured document.

14.   A structured document processing method for processing a structured document that is structurally represented and contains one or more document parts, the structured document processing method comprising the steps of:

(a) analyzing a first structured document, in which an extraction instruction specifying extraction of a document part is embedded, to generate a parse tree;

(b) analyzing a second structured document, in which a repetitive duplication

instruction specifying duplication of a document part by a given number of times or an insertion/substitution instruction specifying insertion or substitution of a document part is embedded, and generating a parse tree;

(c) scanning the parse tree and separating the instruction from the document part, to which the instruction is provided, to retrieve the instructions;

(d) merging and sorting the extraction instruction retrieved from the first structured document and the repetitive duplication instruction and/or insertion/substitution instruction retrieved from the second structured, and generating a document processing description containing an instruction string for processing the first and second structured documents;

(e) interpreting the document processing description and retrieving a first document part subject to the extraction instruction from the first structured document;

(f) interpreting the document processing description and repeatedly duplicating a document part subject to the repetitive duplication instruction and an instruction provided to the document part by a given number of times;

(g) interpreting the document processing description and inserting the first document part before or after a second document part subject to the insertion/substitution instruction or substituting the first document part for the second document part; and

(h) outputting a parse tree obtained as a result of execution of the steps (e) to (g).